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EXAMINER	
CURS, NATHAN M	

ART UNIT	PAPER NUMBER
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/821,590	WAKE ET AL.	
	Examiner	Art Unit	
	NATHAN M. CURS	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,9-20,22-29 and 31-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *18-20 and 31-34* is/are allowed.

6)☒ Claim(s) *1-6,9-11,13-17,22,23 and 25-29* is/are rejected.

7)☒ Claim(s) *12 and 24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 August 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3, 4, 9-11, 13-17, 22, 23, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rumpf et al. ("Rumpf") (US Patent Application Publication No. 2004/0047313) in view of Bauman (US Patent Application Publication No. 2007/0117592).

Regarding claim 1, Rumpf discloses an optical communications system employing radio frequency signals, the system comprising: at least one optical transceiver unit (fig. 1, element 16 and paragraph 0025); at least one remote unit which is remote from the at least one optical transceiver unit, the at least one remote unit provides a radio connection point for mobile terminals in an associated coverage area (fig. 1, elements 12 and paragraphs 0025-0026), the at least one remote unit comprising, at least one optoelectronic transducer for converting optical data signals to radio frequency signals and converting radio signals to optical signals (paragraph 0026), and at least one antenna to receive and send radio frequency signals (fig. 3, element 34 and paragraphs 0029-0031, 0043 and 0063); at least one optical fiber data link between the at least one optical transceiver unit and the at least one remote unit for transmitting

optical data signals therebetween (paragraphs 0025 and 0026); and at least one optical fiber power link between the at least one optical transceiver unit and the at least one remote unit for providing electrical power at the at least one remote unit (fig. 2 paragraphs 0029 and 0030). Rumpf discloses cellular telephone communication (fig. 1 element 14 and paragraph 0026), but does not disclose that the optical transceiver unit is in reverse and forward RF signal communication with at least one base station. Bauman discloses an optical transceiver unit (fig. 2 element 201) connected to remote units that are remote from the optical transceiver unit (fig. 2 elements 205-208 and paragraphs 0032 and 0034), and connected to a base station over an RF link that carries RF signals (fig. 2 elements 200 and 215 and paragraphs 0030-0031, where the signals to and from the remote units 205-208 are combined on the single RF link), with the base station further connected to a PSTN network (fig. 2 element 230 and paragraph 0029). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Rumpf in light of Bauman, connecting the optical transceiver unit of Rumpf through to a PSTN by way of an RF-linked base station, in order to enable the cellular telephone of Rumpf to communicate with PSTN telephone users.

Regarding claim 3, the combination of Rumpf and Bauman discloses the optical communications system according to claim 1 wherein the at least one optoelectronic transducer comprises a first optoelectronic transducer for converting optical data signals to radio frequency signals and a second optoelectronic transducer for converting radio frequency signals to optical signals (Rumpf: figs. 5 and 6 and paragraph 0063).

Regarding claim 4, the combination of Rumpf and Bauman discloses the optical communications system according to claim 3 wherein the first and second optoelectronic transducers are low power consumption devices (Rumpf: figs. 5 and 6, elements 26 and 26', where optical detector and optical emitter diodes read on low power consumption devices).

Regarding claim 9, the combination of Rumpf and Bauman discloses the optical communications system according to claim 1 but as combined above does not disclose a radio frequency combiner between the at least one optical transceiver unit and a plurality of base stations in the cellular wireless communications network for combining forward link radio frequency signals which are received from the plurality of base stations. However, Bauman also discloses a mobile switching center, between base station 200 and the PSTN and connected to a plurality of other base stations, which combines the radio frequency calls of these other base stations and connects them to optical transceiver unit 201 by way of base station 200 (paragraph 0019). It would have been obvious to one of ordinary skill in the art at the time of the invention to add a mobile switching center, between the base station of the combination and the PSTN and connected to an additional plurality of other base stations, to provide the benefit of addition communications to other users in additional wireless coverage areas.

Regarding claim 10, the combination of Rumpf and Bauman discloses the optical communications system according to claim 1 but as combined above does not disclose a plurality of optical transceiver units and a radio frequency combiner between the plurality of optical transceiver units and the at least one base station for combining

reverse link radio frequency signals which are received from the plurality of optical transceiver units. However, Bauman discloses a radio frequency combiner connected between the base station 200 and other base stations (paragraph 0019, where the mobile switching center is between the base station 200 and the other base stations). It would have been obvious to one of ordinary skill in the art at the time of the invention to add a mobile switching center, between the base station of the combination and the PSTN and connected to an additional plurality of other base stations and to add addition optical transceivers and corresponding remote units to the respective additional base stations, to provide the benefit of addition communications to other coverage areas.

Regarding claim 11, the combination of Rumpf and Bauman discloses the optical communications system according to claim 1 wherein an optical fiber provides both the optical fiber data link and the optical fiber power link using wavelength division multiplexing (Rumpf: paragraph 0049).

Regarding claim 13, the combination of Rumpf and Bauman discloses the optical communications system according to claim 1 wherein the radio frequency signals comprise multiple radio carriers (Rumpf: fig. 2, where the different RF electronic devices read on different radio carriers) within multiple frequency bands (Rumpf: paragraph 0040, where the UWB bandwidth overlaps multiple coexisting narrow bandwidths) with multiple protocols (Rumpf: fig. 2, where the different types of RF electronic devices read on different protocols).

Regarding claim 14, the combination of Rumpf and Bauman discloses the optical communications system according to claim 10 wherein: the radio frequency combiner is

between the plurality of optical transceiver units and a plurality of base stations in the cellular wireless communications network (Bauman: paragraph 0019, where the mobile switching center is between each of the plurality of optical transceiver units and the plurality of base stations corresponding to the other optical transceiver units).

Regarding claim 15, Rumpf discloses an optical communications system employing radio frequency signals, the system comprising: at least one optical transceiver unit in a cellular wireless communications network (fig. 1, element 16 and paragraph 0025); at least one remote unit which is remote from the at least one optical transceiver unit, the at least one remote unit provides a radio connection point for mobile terminals in an associated coverage area (fig. 1, elements 12 and paragraphs 0025-0026), and comprises means for converting optical data signals to radio frequency signals and means for converting radio signals to optical signals (paragraph 0026), and at least one antenna to receive and send radio frequency signals (fig. 3 element 34 and paragraph 0063); at least one optical fiber data link between the at least one optical transceiver unit and the at least one remote unit for transmitting optical data signals therebetween (paragraphs 0025 and 0026); and at least one optical fiber power link between the at least one optical transceiver unit and the at least one remote unit for providing electrical power at the at least one remote unit (fig. 2 paragraphs 0029 and 0030), the at least one remote unit further including means for converting optical power from the at least one optical fiber power link into electrical power, and means for converting the electrical power into a form that is required to power the means for converting optical data signals to radio frequency signals (figs. 2-4 and paragraphs

0030-0031). Rumpf discloses cellular telephone communication (fig. 1 element 14 and paragraph 0026), but does not disclose that the optical transceiver unit is in communication with at least one base station, the optical transceiver unit communicating reverse link radio frequency signals to the at least one base station and receiving forward link radio frequency signals from the at least one base station. Bauman discloses an optical transceiver unit (fig. 2 element 201) connected to remote units that are remote from the optical transceiver unit (fig. 2 elements 205-208 and paragraphs 0032 and 0034), and connected to a base station over an RF link that carries bidirectional RF signals (fig. 2 elements 200 and 215 and paragraphs 0030-0031, where the signals to and from the remote units 205-208 are combined on the single RF link), with the base station further connected to a PSTN network (fig. 2 element 230 and paragraph 0029). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Rumpf in light of Bauman, connecting the optical transceiver unit of Rumpf through to a PSTN by way of an RF-linked base station, in order to enable the cellular telephone of Rumpf to communicate with PSTN telephone users.

Regarding claim 16, Rumpf discloses a method for communicating between a central unit and a remote unit, said method comprising: communicating an optical data signal based on combined forward link radio frequency signals from the central unit to a remote unit, which is remote from the central unit, via an optical fiber data link (fig. 1 and paragraph 0025 and 0026, where element 16 is the central unit and elements 12 are remote units); communicating radiation from the central unit to the remote unit

through an optical fiber power link to electrically power the remote unit (paragraph 0029-0031); converting the optical data signal to a radio frequency signal at the remote unit (paragraph 0026); converting the radiation to electrical power at the remote unit (paragraph 0029-0031); amplifying the radio frequency signal obtained by the converting using the electrical power to provide an amplified radio frequency signal; and sending the amplified radio frequency signal into free space through at least one antenna connected to the remote unit (fig. 3, elements 30 and 34 and paragraphs 0042-0043). Rumpf does not disclose, at the central unit, receiving forward link radio frequency signals from a plurality of base stations in a cellular wireless communications network and combining the forward link radio frequency signals to provide combined forward link radio frequency signals. Bauman discloses a central unit (fig. 2 element 201) connected to remote units that are remote from the central unit (fig. 2 elements 205-208 and paragraphs 0032 and 0034), and connected to a base station over an RF link that carries bidirectional RF signals (fig. 2 elements 200 and 215 and paragraphs 0030-0031, where the signals to and from the remote units 205-208 are combined on the single RF link), with the base station further connected to a PSTN network (fig. 2 element 230 and paragraph 0029) and a mobile switching center, between base station 200 and the PSTN and connected to a plurality of other base stations, which combines the radio frequency calls of these other base stations and connects them to central unit 201 by way of base station 200 (paragraph 0019). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Rumpf in light of Bauman, connecting the central unit of Rumpf through to a mobile switch center, a PSTN, and

other base stations, by way of an RF-linked base station, in order to enable the cellular telephone of Rumpf to communicate with PSTN telephone users and to communicate with other users in additional wireless coverage areas.

Regarding claim 17, Rumpf discloses a method for communicating between a central unit and a plurality of remote units, said method comprising: receiving radiation from the central unit at each remote unit through respective optical fiber power links each remote unit is remote from the central unit (fig. 1 and paragraphs 0025 and 0026 and 0029-0031); at each respective remote unit, converting the radiation to electrical power to electrically power each remote unit (fig. 3 and paragraph 0029-0031); receiving a respective reverse link radio frequency signal at each remote unit from at least one antenna connected to the each one remote unit (fig. 6 and paragraph 0063); converting the respective radio frequency signals to respective optical data signals at each remote unit (fig. 6 and paragraphs 0025, 0026 and 0063); transmitting the respective optical data signals from each remote unit to the central unit through respective optical fiber data links (paragraphs 0025 and 0026). Rumpf does not disclose amplifying the respective reverse link radio frequency signal at each remote unit using the electrical power link before converting them to optical signals. However Rumpf discloses amplifying the forward link radio frequency signal at each remote unit using the electrical power link before transmitting them wirelessly (fig. 3 element 30 and paragraph 0042). Further, the Office takes official notice that amplifying signals after they transmit a distance, in order to boost the signals that have been attenuated due to traveling the distance, is well known in the art. Therefore, it would have been obvious to

one of ordinary skill in the art at the time of the invention to use an amplifier for the reverse link radio frequency signals received from the wireless users in Rumpf, in order to boost the received signals that will have become attenuated due to traveling a distance over the air. Also, Rumpf does not disclose at the central unit converting the respective optical data signals to respective radio frequency signals, combining the respective radio frequency signals, and, responsive to the combining, communicating combined respective radio frequency signals to at least one base station in a cellular wireless communications network. Bauman discloses a central unit (fig. 2 element 201) connected to remote units that are remote from the central unit (fig. 2 elements 205-208 and paragraphs 0032 and 0034), and connected to a base station over an RF link that carries combined bidirectional RF signals (fig. 2 elements 200 and 215 and paragraphs 0030-0031, where the signals to and from the remote units 205-208 are combined on the single RF link), with the base station further connected to a PSTN network (fig. 2 element 230 and paragraph 0029). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Rumpf in light of Bauman, connecting the optical transceiver unit of Rumpf through to a PSTN by way of an RF-linked base station, in order to enable the cellular telephone of Rumpf to communicate with PSTN telephone users.

Regarding claim 22, the combination of Rumpf and Bauman discloses the optical communications system according to claim 1, wherein: the at least one remote unit comprises a photovoltaic converter for converting optical power from the at least one optical fiber power link into electrical power (Rumpf: fig. 2 and paragraph 0031), and an

amplifier coupled between the at least one optoelectronic transducer and the at least one antenna, the amplifier amplifies the radio frequency signals obtained by the converting of the optical data signals for transmission to the mobile terminals, the amplifier is coupled to the photovoltaic converter for receiving the electrical power (fig. 3, element 30 and paragraph 0042).

Regarding claim 23, the combination of Rumpf and Bauman discloses the optical communications system according to claim 1, wherein: the at least one remote unit comprises at least one active component (Rumpf: fig. 3, element 26 and paragraphs 0032 and 0041), a photovoltaic converter for converting optical power from the at least one optical fiber power link into electrical power (Rumpf: fig. 3, element 21 and paragraphs 0031 and 0041), and a regulator for converting the electrical power into a constant voltage or a constant current form that is required to power the at least one active component (Rumpf: fig. 3, element 39 and paragraphs 0029-0031 and 0037).

Regarding claim 28, the combination of Rumpf and Bauman discloses the optical communications system according to claim 1, further comprising: a plurality of remote units, each providing a radio connection point for mobile terminals in associated coverage areas; at least one optical fiber data link between the at least one optical transceiver unit and each of the remote units for transmitting optical data signals therebetween; and at least one optical fiber power link between the at least one optical transceiver unit and each of the remote units for providing electrical power at each of the remote units (Rumpf: fig. 1, where two serially arranged fibers between the central

unit and a remote unit reads on at least one fiber between the central unit and the remote unit).

Regarding claim 29, the combination of Rumpf and Bauman discloses the optical communications system according to claim 15, wherein: the means for converting the electrical power converts the electrical power into a constant voltage or a constant current form (Rumpf: fig. 3, element 20 and paragraph 0029-0031).

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rumpf (US Patent Application Publication No. 2004/0047313) in view of Bauman (US Patent Application Publication No. 2007/0117592) as applied to claims 1, 3, 4, 9-11, 13-17, 22, 23, 28 and 29 above, and further in view of Miyazaki et al. ("Miyazaki") (US Patent Application Publication No. 2003/0118280).

Regarding claim 2, the combination of Rumpf and Bauman discloses the optical communications system according to claim 1 but does not disclose that the at least one optoelectronic transducer comprises an electroabsorption transceiver. Miyazaki discloses an optical-wireless unit (fig. 3 element 40) similar to the optical-wireless remote units of Rumpf, where the optical-wireless unit uses an electroabsorption modulator for optically transmitting the radio signals received from the antenna (fig. 3 element 48 and fig. 6 and paragraph 0073). One of ordinary skill in the art at the time of the invention could have modified the remote unit modulation of the combination, changing the direct modulation to electroabsorption modulation, and the result would have been predictable; namely, the electroabsorption modulation would provide

efficiency, according to Miyazaki. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the direct-modulation of the combination with electroabsorption modulation, for the predictable result of efficient modulation.

4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rumpf (US Patent Application Publication No. 2004/0047313) in view of Bauman (US Patent Application Publication No. 2007/0117592) as applied to claims 1, 3, 4, 9-11, 13-17, 22, 23, 28 and 29 above, and further in view of Tsuji et al. ("Tsuji") (US Patent No. 5664035).

Regarding claim 5, the combination of Rumpf and Bauman discloses the optical communications system according to claim 4 but does not disclose that the second optoelectronic transducer comprises a VCSEL laser. transducer comprises a Mach-Zehnder modulator instead of a VCSEL laser. Tsuji discloses an optical powered transmission system where the optically powered remote unit uses a laser to communicate back to the central unit, the laser operating based on electrical power converted from the received optical power signal coming from the central unit (fig. 1 and col. 5, lines 19-28). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a laser as an engineering design choice in implementing the transducer already disclosed for the combination of Rumpf and Bauman; considering the teachings of both Rumpf and Tsuji, it's clear the type of transducer claimed merely amounts to the selection of expedients known as design choices to one of ordinary skill

in the art. Further, the official takes official notice that VCSEL lasers are well known as low-power lasers for optical communications. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a VCSEL laser in implementing a laser transducer for an optically powered remote unit, to provide the advantage of lower power consumption, since the remote unit doesn't have an internal power supply.

Regarding claim 6, the combination of Rumpf and Bauman discloses the optical communications system according to claim 3 but does not disclose that the second optoelectronic transducer comprises an edge-emitting laser. Tsuji discloses an optical powered transmission system where the optically powered remote unit uses a laser to communicate back to the central unit, the laser operating based on electrical power converted from the received optical power signal coming from the central unit (fig. 1 and col. 5, lines 19-28). Further, the office takes official notice that edge-emitting lasers are well known lasers for optical communications. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an edge-emitting laser as an engineering design choice in implementing the transducer already disclosed in the combination of Rumpf and Bauman; the type of transducer claimed merely amounts to the selection of expedients known as design choices to one of ordinary skill in the art.

5. Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rumpf (US Patent Application Publication No. 2004/0047313) in view of Bauman (US Patent Application Publication No. 2007/0117592), as applicable to claims 1, 3, 4, 9-11,

13-17, 22, 23, 28 and 29 above, and further in view of Banwell et al. ("Banwell") ("Powering the fiber loop optically--a cost analysis", J. Lightwave Tech., vol.11, pp. 481-494, 1993).

Regarding claims 25-27, the combination of Rumpf and Bauman discloses the optical communications system according to claim 1, wherein: the optical transceiver unit comprises a first, high power optical source coupled to the at least one optical fiber power link and a second optical source coupled to the at least one optical fiber data link (Rumpf: paragraph 0049). The combination does not disclose that the optical sources are laser diodes. Banwell discloses laser diodes and discloses providing optical power, up to a 2.5W safety limit, over fiber using a high power laser with a photovoltaic converter at a remote location and an optical fiber linking the two sites for transmission of the optical power (figs. 1 and 2 and page 484 col. 2). One of ordinary skill in the art at the time of the invention could have used lasers for the optical sources of the combination, and specifically a high power laser for the optical power source of the combination, and the results would have been predictable; namely, higher power and longer distance transmission than could be achieved by other conventional optical sources, such as LEDs. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use lasers for the optical sources of the combination, for the predictable result of higher power and longer distance transmission than could be achieved by other conventional optical sources, such as LEDs.

Allowable Subject Matter

6. Claims 12 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 18-20 and 31-34 are allowed.

Response to Arguments

8. Applicant's argument filed 16 January 2008 that Rumpf's cellular telephone is limited to voice communications among LAN users, has been fully considered but is not persuasive. Rumpf discloses that the communication system, encompassing the cellular telephone communication, is not limited to LAN use (paragraph 0025).

The Applicant also argues that Miyazaki discloses a "base station" with an antenna, but does not disclose an optical transceiver in communication with the base station. However, one of ordinary skill would recognize that the structure and function of Miyazaki's "base station" is similar to the Applicant's claimed remote unit, regardless that the Applicant and Miyazaki uses the term "base station" differently. Similarities in structure and function outweigh differences in lexicon.

9. Applicant's other arguments filed 16 January 2008, with respect to obviousness based on O'Shea and anticipation by Rump, have been fully considered and are persuasive in light of the claim amendments. Therefore, the previous respective

rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Rumpf and Bauman.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

11. Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (571) 272-3028. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pairdirect.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/N. M. C./

Examiner, Art Unit 2613

/Shi K. Li/
Primary Examiner, Art Unit 2613